CLAIMS

1. A semiconductor device comprising:

a thin film integrated circuit comprising the thin film transistor, over a substrate;

an antenna,

wherein the thin film transistor comprises a pattern formed by a droplet discharging method or a printing method; and

wherein the thin film integrated circuit is electrically connected to the antenna.

2. The semiconductor device according to claim 1, wherein the pattern is at least one of a gate electrode, a source electrode, a drain electrode, and a pixel electrode, a source wiring and a drain wiring.

3. The semiconductor device according to claim 1, wherein the antenna is formed over the thin film transistor.

4. The semiconductor device according to claim 1, wherein the thin film integrate circuit is formed over any one of a glass substrate such as a barium borosilicate glass, an alumino borosilicate glass, a quartz, a stainless, and a synthetic resin.

5. The semiconductor device according to claim 1, wherein the thin film transistor comprises a non-crystalline semiconductor film.

6. The semiconductor device according to claim 1, wherein the thin film integrated circuit is electrically connected to the antenna by a wire bonding method.

7. The semiconductor device according to claim 1, wherein the antenna comprises any one of Ag, Al, Au, Cu, and Pt.

8. A card comprising the semiconductor device according to claim 1.

9. A tag comprising the semiconductor device according to claim 1.

10. A semiconductor device comprising:

a thin film integrated circuit comprising the thin film transistor, over a substrate;

an antenna,

wherein the thin film integrated circuit comprises a pattern formed by a droplet discharging method or a printing method,

wherein the thin film integrated circuit is electrically connected to the antenna, and

wherein the antenna is provided so as to sandwich the thin film integrated circuit.

11. The semiconductor device according to claim 10, wherein the antenna is provided symmetrically through the thin film integrated circuit.

12. The semiconductor device according to claim 10, wherein the pattern is at least one of a gate electrode, a source electrode, a drain electrode, and a pixel electrode, a source wiring and a drain wiring.

13. The semiconductor device according to claim 10, wherein the antenna is formed over the thin film transistor.

14. The semiconductor device according to claim 10, wherein the thin film integrate circuit is formed over any one of a glass substrate such as a barium borosilicate glass, an alumino borosilicate glass, a quartz, a stainless, and a synthetic resin.

15. The semiconductor device according to claim 10, wherein the thin film transistor comprises a non-crystalline semiconductor film.

16. The semiconductor device according to claim 10, wherein the thin film integrated circuit is electrically connected to the antenna by a wire bonding method.

17. The semiconductor device according to claim 10, wherein the antenna comprises any one of Ag, Al, Au, Cu, and Pt.

18. A card comprising the semiconductor device according to claim 10.

19. A tag comprising the semiconductor device according to claim 10.

20. A semiconductor device comprising:

a thin film integrated circuit comprising a thin film transistor, over a substrate;

an antenna formed over a flexible substrate,

wherein the thin film integrated circuit comprises a pattern formed by a droplet discharging method or a printing method,

wherein the thin film integrated circuit is electrically connected to the antenna, and

wherein the substrate is folded to sandwich the thin film integrated circuit therebetween.

21. The semiconductor device according to claim 20, wherein the pattern is at least one of a gate electrode, a source electrode, a drain electrode, and a pixel electrode, a source wiring and a drain wiring.

22. The semiconductor device according to claim 20, wherein the thin film integrate circuit is formed over any one of a glass substrate such as a barium

borosilicate glass, an alumino borosilicate glass, a quartz, a stainless, and a synthetic resin.

23. The semiconductor device according to claim 20, wherein the thin film transistor comprises a non-crystalline semiconductor film.

24. The semiconductor device according to claim 20, wherein the thin film integrated circuit is electrically connected to the antenna by a wire bonding method.

25. The semiconductor device according to claim 20, wherein the antenna comprises any one of Ag, Al, Au, Cu, and Pt.

26. A card comprising the semiconductor device according to claim 20.

27. A tag comprising the semiconductor device according to claim 20.

28. A method for manufacturing a semiconductor device comprising:

forming a thin film integrated circuit by a droplet discharging method or a printing method over a first substrate;

forming an antenna over a second substrate; and

attaching the first substrate to the second substrate so that the thin film integrated circuit is electrically connected to the antenna.

29. The method for manufacturing a semiconductor device according to claim 28, wherein the antenna is formed by a sputtering method, a droplet discharging method, a printing method, a plating method, a photolithography method, or a vapor deposition method, using a metal mask.

30. The method for manufacturing a semiconductor device according to claim 28, wherein the antenna is formed by a sputtering method, a droplet discharging method,

a printing method, a plating method, a photolithography method, or a vapor deposition method using a metal mask, and the antenna is pressed.

31. The method for manufacturing a semiconductor device according to claim 28, the method further comprising:

forming a metal film and an oxide film containing silicon over the metal film, between the first substrate and the thin film integrated circuit;

forming a metal oxide film comprising a metal included in the metal film on a surface of the metal film; and

separating the first substrate at an interface between the oxide and the metal film or an interface between the metal oxide film and the oxide film containing silicon.

32. A method for manufacturing a semiconductor device comprising:

forming a thin film integrated circuit by a droplet discharging method or a printing method over a first substrate in at least one step;

forming an antenna over a second substrate having flexibility; and

folding the second substrate to sandwich the thin film integrated circuit therebetween so that the thin film integrated circuit is electrically connected to the antenna.

33. The method for manufacturing a semiconductor device according to claim 32, wherein the antenna is formed by a sputtering method, a droplet discharging method, a printing method, a plating method, a photolithography method, or a vapor deposition method, using a metal mask.

34. The method for manufacturing a semiconductor device according to claim 32, wherein the antenna is formed by a sputtering method, a droplet discharging method, a printing method, a plating method, a photolithography method, or a vapor deposition method using a metal mask, and the antenna is pressed.

35. The method for manufacturing a semiconductor device according to claim 32, the method further comprising:

forming a metal film and an oxide film containing silicon over the metal film, between the first substrate and the thin film integrated circuit;

forming a metal oxide film comprising a metal included in the metal film on a surface of the metal film; and

separating the first substrate at an interface between the oxide and the metal film or an interface between the metal oxide film and the oxide film containing silicon.

36. A method for manufacturing a semiconductor device comprising:

forming a thin film integrated circuit by a droplet discharging method or a printing method over a first substrate in at least one step;

forming an antenna over a second substrate;

attaching the first substrate to the second substrate so that the thin film integrated circuit is electrically connected to the antenna; and

after attaching the first substrate to the second substrate, separating the first substrate from the thin film integrated circuit.

37. The method for manufacturing a semiconductor device according to claim 36, wherein the antenna is formed by a sputtering method, a droplet discharging method, a printing method, a plating method, a photolithography method, or a vapor deposition method, using a metal mask.

38. The method for manufacturing a semiconductor device according to claim 36, wherein the antenna is formed by a sputtering method, a droplet discharging method, a printing method, a plating method, a photolithography method, or a vapor deposition method using a metal mask, and the antenna is pressed.

39. The method for manufacturing a semiconductor device according to claim 36, the method further comprising:

forming a metal film and an oxide film containing silicon over the metal film, between the first substrate and the thin film integrated circuit;

forming a metal oxide film comprising a metal included in the metal film on a surface of the metal film; and

separating the first substrate at an interface between the oxide and the metal film or an interface between the metal oxide film and the oxide film containing silicon.

40. A method for manufacturing a semiconductor device comprising:

forming a thin film integrated circuit by a droplet discharging method or a printing method over a first substrate;

attaching a second substrate onto the thin film integrated circuit;

separating the first substrate from the thin film integrated circuit;

forming an antenna over a third substrate; and

attaching the second substrate to the third substrate so that the thin film integrated circuit is electrically connected to the antenna.

41. The method for manufacturing a semiconductor device according to claim 40, wherein the antenna is formed by a sputtering method, a droplet discharging method, a printing method, a plating method, a photolithography method, or a vapor deposition method, using a metal mask.

42. The method for manufacturing a semiconductor device according to claim 40, wherein the antenna is formed by a sputtering method, a droplet discharging method, a printing method, a plating method, a photolithography method, or a vapor deposition method using a metal mask, and the antenna is pressed.

43. The method for manufacturing a semiconductor device according to claim 40, the method further comprising:

forming a metal film and an oxide film containing silicon over the metal film, between the first substrate and the thin film integrated circuit;

forming a metal oxide film comprising a metal included in the metal film on a surface of the metal film; and

separating the first substrate at an interface between the oxide and the metal film or an interface between the metal oxide film and the oxide film containing silicon.

44. A method for manufacturing a semiconductor device comprising:

forming a thin film integrated circuit by a droplet discharging method or a printing method over a first substrate;

forming an antenna over the thin film integrated circuit;

attaching the first substrate to the second substrate so that the thin film integrated circuit is electrically connected to the antenna; and

separating the first substrate from the thin film integrated circuit.

45. The method for manufacturing a semiconductor device according to claim 44, wherein the antenna is formed by a sputtering method, a droplet discharging method, a printing method, a plating method, a photolithography method, or a vapor deposition method, using a metal mask.

46. The method for manufacturing a semiconductor device according to claim 44, wherein the antenna is formed by a sputtering method, a droplet discharging method, a printing method, a plating method, a photolithography method, or a vapor deposition method using a metal mask, and the antenna is pressed.

47. The method for manufacturing a semiconductor device according to claim 44, the method further comprising:

forming a metal film and an oxide film containing silicon over the metal film, between the first substrate and the thin film integrated circuit;

forming a metal oxide film comprising a metal included in the metal film on a surface of the metal film; and

separating the first substrate at an interface between the oxide and the metal

film or an interface between the metal oxide film and the oxide film containing silicon.